



To: ALL HEALTH CARE PROVIDERS including Emergency Physicians, PA/NPs, Nurses,  
Intensivists, Hospitalists  
From: Ron Kirschner, MD  
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Subject: IV Fat Emulsion – not just for nutrition any more  
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This fall, toxicology specialists from around the world attended the 2009 North American Congress of Clinical Toxicology (NACCT). A conference highlight was the discussion of a new use for an old product: **intravenous fat emulsion** (IFE, Intralipid). Long used for parenteral nutrition, IFE has been used by anesthesiologists to successfully treat cardiac arrest from bupivacaine toxicity. The exact mechanism is unclear but IFE may act as a sink for this highly lipid soluble drug, or provide an energy source for the heart.

Several case reports at NACCT reported IFE's successful use in treating cardiovascular collapse following overdose of several common **cardiotoxic drugs** (including calcium channel blockers, beta blockers, bupropion, antiarrhythmics and TCAs). While there are no controlled human studies, the number of human case reports is growing. Based on experience with nutritional use in TPN and its limited use in overdose patients, IFE appears to have a good safety profile. There is a risk of lipemia (making many blood tests uninterpretable for hours) as well as pancreatitis and other complications of fat overload. In patients who are near cardiac arrest, the potential benefits likely far outweigh the risks.

**This has not replaced traditional antidotal care (e.g. sodium bicarbonate for TCAs), but does give us an option for those not responding to standard remedies.**

The bottom line: If your patient has cardiovascular collapse due to toxicity from a cardiotoxic drug, and standard therapy isn't working, please call us to discuss IFE. **There is no single standard regimen and specific treatment plans should be discussed with one of the toxicologists**, but one of the more commonly used is:

- 20% fat emulsion 1.5 mL/kg IV over 1 minute
- Can repeat q 3-5 min up to 2 times if no return of spontaneous circulation
- If needed can infuse 0.25 mL/kg/min for 30-60 minutes

**Our trained staff of nurse specialists in poison information and physician toxicologists is available 24 hours a day to answer your questions.**